

## FIRST RECORDS OF ENICOCEPHALIDAE (HEMIPTERA: HETEROPTERA) FROM WISCONSIN<sup>1</sup>

Steven J. Krauth, Daniel K. Young<sup>2</sup>

**ABSTRACT:** The family Enicocephalidae is recorded from Wisconsin for the first time. *Systelloderes biceps* was collected from pitfall traps at three sites in southeastern Wisconsin during June and July.

In North America Enicocephalidae is a small family of five genera and ten species (Froeschner 1988). Individuals are generally small and frail, and some swarm in mating flights (Kritsky 1977a), thereby giving rise to the name "gnat bugs". Nymphs and adults are predaceous on other small arthropods. Froeschner (1988) reviewed the literature and natural history for species of Enicocephalidae. The infraorder Enicocephalomorpha, to which the Enicocephalidae belong, is distributed across the southern United States, Australia, and Africa.

Specimens of enicocephalids were recovered from pitfall traps at three sites in southeastern Wisconsin, which constitute the first records for this family in the state. One specimen was collected in the Grassy Lake Wildlife Area, Columbia Co., WI, in conjunction with a Wisconsin Department of Natural Resources study of pheasant nesting success (Leonard Huebner, pers. comm.). Two individuals were also collected as part of a survey of macroarthropods associated with the long-term Wisconsin Integrated Cropping Systems Trial. One of the project's primary objectives is to compare, over time, the environmental impacts of six cropping systems that vary considerably in terms of chemical and physical soil disturbances, and thus, sustainability. One specimen from the Arlington Research Station plots in Columbia Co., WI, was taken from a pitfall trap in the corn phase of a drilled soybean-corn rotation. A second specimen was recovered from a pitfall trap in the corn year of a "rapid turnaround alfalfa" rotation (alfalfa-corn-oats/alfalfa) at the Lakeland Agricultural Complex, Walworth Co., WI. Pitfall traps used at the Arlington and Lakeland locations consisted of two nested 8 oz. plastic cups buried in agricultural fields to the lip of the cups. A few ounces of ethylene glycol were poured into the inner cup, and the pitfall trap opening was sheltered from above by a styrofoam plate supported by an offset wooden dowel inserted into the ground near the trap. The cups

<sup>1</sup> Received November 18, 1993. Accepted December 25, 1993.

<sup>2</sup> Department of Entomology, University of Wisconsin, Madison, WI. 53706

were sampled at two-week intervals throughout the growing season.

Using the available keys to species (Froeschner 1944, Kritsky 1977b, 1978a and b, 1981, Usinger 1945) the Wisconsin material was identified as *Systeloderes biceps* (Say). Distribution: Ariz., D.C., Fla., Ia., Ill., Ind., Ky., La., Md., Mo., N.C., N.Y., Pa., Que., R.I., Tenn., Ut., Va., Cuba, Mexico to Panama (Froeschner 1988).

Specimens from these collections are deposited in the Insect Research Collection of the Department of Entomology, University of Wisconsin-Madison.

MATERIAL EXAMINED: WI: Columbia Co., Grassy Lake State Wildlife Area, Coll: 1 July 1985, pitfall trapped, one male; Columbia Co., Arlington Agricultural Station, 12-17 June 1992, plot 108; T2 corn, pitfall trapped, one male; Walworth Co., Lakeland Ag. Farms, 4-11 June 1992, plot 307; T5 corn, pitfall trapped, one female.

#### ACKNOWLEDGMENTS

We acknowledge the work of Greg Snorheim in the initial phase of this project and we thank David Hogg and Tom Phillips for reviewing the manuscript. Funding for this work was provided, in part, by the Wisconsin Integrated Cropping System Trial, which is supported by the W.K. Kellogg Foundation, Cooperative Extension Services, the College of Agricultural and Life Sciences, the Center for Integrated Agricultural Systems, and the Michael Fields Agricultural Institute.

#### LITERATURE CITED

- Froeschner, R.C. 1944. Contributions to a synopsis of the Hemiptera of Missouri. Part 3: Lygaeidae, Pyrrhocoridae, Piesmatidae, Tingidae, Enicocephalidae, Phymatidae, Ploiariidae, Reduviidae, Nabidae. Amer. Midland Nat. 31(3):638-683.
- Froeschner, R.C. 1988. Family 13. pp. 132-135. In: Henry, T. J. and R. C. Froeschner, (eds.) Catalog of the Heteroptera, or true bugs, of Canada and the Continental United States. E.J. Brill, New York.
- Kritsky, G.R. 1977a. Observations on the morphology and behavior of the Enicocephalidae (Hemiptera). Entomol. News 88: 105-110 .
- Kritsky, G.R. 1977b. Two new genera of Enicocephalidae (Hemiptera). Entomol. News 88:161-168.
- Kritsky, G.R. 1978a. The North American and Caribbean species of *Systeloderes* (Hemiptera: Enicocephalidae). Entomol. News 89:65-73.
- Kritsky, G.R. 1978b. A new species of *Hymenocoris* from Mexico (Hemiptera: Enicocephalidae). Entomol. News 89:74-76.
- Kritsky, G.R. 1981. Two new species of *Alienates* (Hemiptera: Enicocephalidae). Entomol. News 92:130-132.
- Usinger, R.L. 1945. Classification of the Enicocephalidae. Ann. Entomol. Soc. Amer. 38(3):321-342.